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WHAT IS CLAIMED IS:

1. A method of enhancing the response of a tumor to irradiation, comprising:

a) administering to a patient in need of such therapy a radiosensitizing amount of a pharmaceutical composition comprising paclitaxel, docetaxel, eptopside, teniposide, camptothecin or epothilone conjugated to a water soluble polyamino acid polymer and a pharmaceutically acceptable carrier;

b) irradiating said tumor;

wherein said conjugated paclitaxel or docetaxel have increased water solubility, efficacy and accumulation within a tumor compared with the corresponding unconjugated drugs.

2. The method of claim 1, wherein said polymer is selected from polyglutamic acids, polyaspartic acids or polylysines.

3. The method of claim 2, wherein said polymer has a molecular weight of about 5000 to about 100000 daltons.

4. The method of claim 2, wherein said polymer has a molecular weight of about 20000 to about 80000 daltons.

5. The method of claim 2, wherein said polymer has a molecular weight of about 25000 to about 50000 daltons.

6. The method of claim 1, wherein said polymer is a polyglutamic acid.

7. The method of claim 6, wherein said conjugate comprises from about 2% to about 35% by weight of paclitaxel or docetaxel.

8. The method of claim 1, wherein step (b) is carried out by administering gamma irradiation to said tumor.

9. The method of claim 9, wherein said composition is administered prior to irradiation.

10. The method of claim 9, wherein said composition is administered following irradiation.

11. The method of claim 9, wherein said irradiation dose is about 10 Gray per week, and said composition is administered within 1-2 days of irradiation.

12. The method of claim 9, wherein said cancer is breast cancer, ovarian cancer, malignant melanoma, lung cancer, gastric cancer, prostate cancer, colon cancer, head and neck cancer; leukemia or Kaposi's sarcoma.

13. A method of treating cancer comprising:

- a) administering to a patient in need of such therapy a radiosensitizing amount of a pharmaceutical composition comprising paclitaxel, docetaxel, eptopside, teniposide, camptothecin or epothilone conjugated to a polyglutamic acid polymer and a pharmaceutically acceptable carrier; and
- b) irradiating said tumor.

14. The method of claim 13, wherein the amount of said composition is from about 0.5 times to about 2 times the maximum tolerated doses of paclitaxel in equivalent paclitaxel doses.